MARIJUANA: A PUBLIC HEALTH PRIMER



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Approaches to
Marijuana, Maine

PRESENTATION OVERVIEW

- Marijuana The Basics (slides from SAMHS Marijuana slide bank)
- Maine Data
- Recap from Maine Marijuana Summit
- Update on the political/policy landscape
- Latest public health date from Colorado
- Policy considerations and resources from legal states
- Q & A

WHAT IS SAM MAINE?

Background and History

ABOUT SMART APPROACHES TO MARIJUANA

Project SAM is a nonpartisan alliance of lawmakers, scientists and other concerned citizens who want to move beyond simplistic discussions of "incarceration versus legalization" when discussing marijuana use and instead focus on practical changes in marijuana policy that neither demonizes users nor legalizes the drug.

SAM MAINE'S FOUR GOALS

- To inform public policy with the science of today's marijuana.
- To prevent the establishment of "Big Marijuana" and a 21st-Century tobacco industry that would market marijuana to children.
- To promote research of marijuana's medical properties and produce, non-smoked, non-psychoactive pharmacy-attainable medications.
- To have an adult conversation about reducing the unintended consequences of current marijuana policies, such as lifelong stigma due to arrest.

Marijuana: The Basics

Marijuana Basics: Common Forms

 Marijuana refers to the leaves and flowering tops of the cannabis plant.



 Buds have higher THC* content (the main active chemical in marijuana.)

^{*}Delta-9-Tetrahydrocannabinol – the active ingredient in cannabis that causes intoxication



Marijuana Basics: Common Forms

Hashish' (or, 'hash') is the THC- filled secretions of the plant, which are collected, dried, compressed and smoked.

Hashish oil is produced by removing the cannabinoids from the plant material with a liquid.

In the U.S., marijuana, hashish and hashish oil are Schedule I controlled substances.

Marijuana Basics

- Marijuana is usually smoked as a cigarette ('joint'), a cigar ('blunt'), or through a water pipe or bong.
- Marijuana can also be orally ingested. (Baked into food, boiled in water to make tea, or pill form in the case of Marinol.)
- Marijuana can be heated with a liquid until the active ingredients turn to vapor which can be inhaled.

Marijuana Basics

Common effects include:

- Paranoia
- Short term memory loss
- Relaxation
- Heightened sensory perception (brighter colors)
- Laughter
- Altered perception of time
- Increased appetite
- Euphoria

Marijuana Basics

- The FDA does not get involved to ensure safety of marijuana due to marijuana being federally illegal.
- Marijuana is not inspected or certified, making it impossible to assess its safety for ingestion.
- Chemicals such as insecticides and pesticides may be applied to marijuana plants to enhance the growing process.
- Marijuana can sometimes be laced with other drugs and/or substances (such as bath salts/cocaine) making the use of marijuana much more dangerous.

New Trends - Dabbing

- Hash oil
- Budder
- Honey Oil
- Wax or Ear Wax
- Smoked in oil rig
- 1 dab = 5 joints*





New Trends: Wax

- Made by removing the THC from the marijuana by using butane which is highly flammable.
 Similar methods are used in the production of methamphetamine, cocaine and crack.
- Wax may contain 70% to 90% of THC. Users may have a high that lasts up to 24 hours.
- Wax is legal in CO, for anyone over the age of 21 and can be bought in recreational marijuana dispensaries.

New Trends - Vaporizers

- Teens have discovered the "G-Pen" which is used for medical marijuana.
- Gives the appearance of a pen or electronic cigarette.
- Does not produce smoke or any odor.

Marijuana: Impairment

Impairment

Effects of marijuana vary as a result of:

- Individual physical characteristics metabolism/weight/age
- Dose (quantity and frequency)
- Route of administration
- Experience of user
- Other substance use



Marijuana, the Brain, and Impairment

- The human brain is not fully developed until age 25.
- The teen brain is more vulnerable to the negative effects of marijuana use.
- THC affects the <u>(cannabinoid receptors)</u> parts of the brain that influence pleasure, memory, thinking, sensory, time perception, coordinated movement and concentration. A "high" is produced when these parts of the brain are

overstimulated.

- The effects of being high creates:
 - Memory problems
 - Problems with processing information
 - Poor sensory & time perception
 - Poor concentration & coordination

New Study Finds More Evidence of Marijuana's Damage on the Brain

New study from University of Michigan published in JAMA Psychiatry:

- long-term marijuana usage is associated with a decrease in the brain's response time.
- Over time, use alters anticipatory reward processing in the brain and may increase risk for continued drug use and addiction
- http://www.cadca.org/resources/new-studyfinds-more-evidence-marijuanas-damagebrain

Lasting impairment after use can result in difficulty with:

- Complex tasks
- Learning new skills
- Alertness and attention
- Ability to recall information
- Decision making

When using, impaired decision-making can result in:

- Risky sexual behavior STD's, HIV and unintended pregnancy
- Increased risk of exposure to other substances

Impairment: Driving

- Teens are at a high risk of being involved in vehicle accidents.
 When combined with their lack of experience, being under the influence of marijuana increases this risk even further.
- Studies found that driving ability became impaired after marijuana use.
- Drivers under the influence of marijuana have shorter attention spans and reduced reaction times.
- Driving while or after smoking marijuana is illegal.

Health: Effects on the Body

Marijuana can cause the heart rate to increase by 20 to 50 beats per minute. This increase can last for hours after use has stopped.

Increased heart rates can be even greater if other drugs are used at the same time.

Source: Mittleman MA, Lewis RA, Maclure M et al. (2001) Triggering myocardial infarction by marijuana. *Circulation*, 103(23) 2805–2809.

Health: Effects on the Body

Researchers found that marijuana users with pre-existing conditions have an increased risk for a heart attack compared to the general risk of heart attack when not smoking.

Source: Mittleman MA, Lewis RA, Maclure M et al. (2001) Triggering myocardial infarction by marijuana. *Circulation*, 103(23) 2805–2809.

Marijuana smoke

- Classified as a Carcinogen in California
- At least 33 chemicals in tobacco and marijuana smoke are classified as carcinogens under CA prop 65:
 - Benzene
 - Benzopyrene
 - Arsenic
 - Formaldehyde
 - Mercury
 - Naphthalene



"In summary, there is some evidence from studies in humans that marijuana smoke is associated with increased cancer risk."

Addiction:

- A state in which a person engages in a compulsive behavior that may be reinforcing and initially pleasurable.
- Loss of control when trying to limit intake.
- Continued use despite negative consequences.

<u>Dependence:</u>

- A person physically and mentally needs a drug in order for their body to function normally.
- The body becomes dependent on a drug physically and psychologically.
- Stopping the use of the drug leads to physical withdrawal symptoms.

Those who are addicted experience withdrawal symptoms:

- Irritability
- Anxiety
- Insomnia or sleep disturbances
- Appetite Disturbance
- Depression



Most studies suggest that withdrawal symptoms start on the first day of abstinence, and usually peak within the first 2 to 3 days of quitting, with the exception of sleep disturbance.

Withdrawal symptoms are usually over after 2 weeks, but this depends on how dependent someone is on cannabis before trying to quit.

Source: National Cannabis Prevention & Information Centre. (2011) Cannabis Withdrawal: Factsheet 24. Accessed at: http://ncpic.org.au/workforce/alcohol-and-other-drug-workers/cannabis-information/factsheets/pdf/cannabis-withdrawal

- Marijuana dependence is the 3rd most common type of drug dependence in many parts of the world, including the U.S. and Canada. (Tobacco and alcohol are 1st and 2nd)
 - Source: United Nations Office on Drug and Crime. ND. Cannabis A Short Review
- * The Risk of Addiction goes from about 1 in 11 overall to about 1 in 6 for those who start using in their teens.
 - Source: National Institute of Drug Abuse. Dec. 12,2012. http://www.nih.gov/news/health/dec2012/nida-19.htm
- Marijuana is the primary drug of abuse in 18 % of U.S. treatment admissions.
 - Source: Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. Treatment Episode Data Set (TEDS): 2000-2010. National Admissions to Substance Abuse Treatment Services.

YOUTH DATA IN MAINE – MIDDLE SCHOOL

	2013	2015
Lifetime Use	8.2%	7.2%
Past 30 Day Use	4.4%	3.8%
Easy to Obtain	17.8%	15.3%
Parents accepting of use	5.1%	5.1%
Low perceived risk of harm from regular use	29.4%	28.5%

NOTE: None of the changes from 2013 to 2015 are statistically significant. All measures are statistically flat.

Maine Integrated Youth Health Survey, 2015

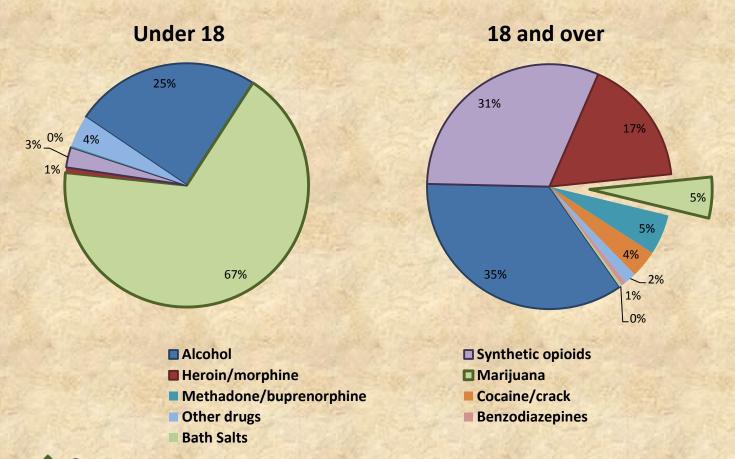
YOUTH DATA IN MAINE – HIGH SCHOOL

	2013	2015
Past 30 Day Use	22.0%	19.1%
Easy to Obtain	56.2%	54.6%
Parents accepting of use	15.3%	16.6%
Low perceived risk of harm from smoking 1-2 times/week	58.3%	59.9%
Peers accepting of regular use	52.7%	53.3%

NOTE: None of the changes from 2013 to 2015 are statistically significant. All measures are statistically flat.

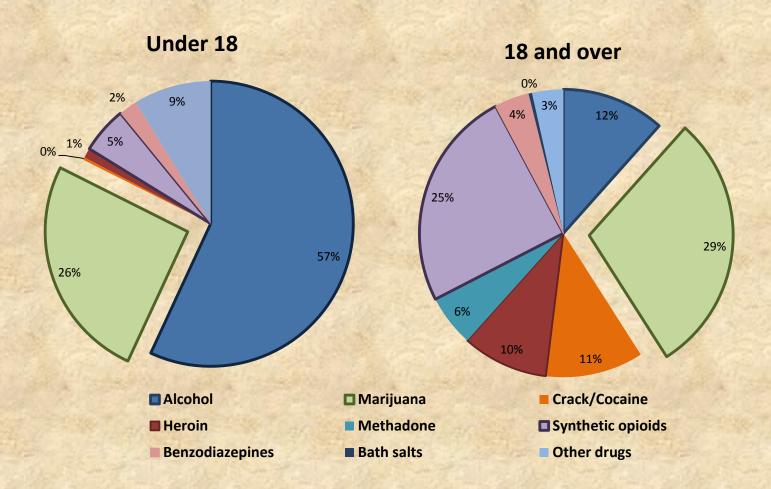
Maine Integrated Youth Health Survey, 2015

Primary Drug Admissions (TDS, 2013)



In 2013, Marijuana accounted for 67% of primary treatment admissions for under 18 and 5% for adults 18 and over.

Secondary Drug Admissions (TDS, 2013)



In 2012, Marijuana accounted for 26% of secondary treatment admissions for under 18 and 29% for adults 18 and over.

Marijuana in the New Millennium

A FORUM WITH THE EXPERTS

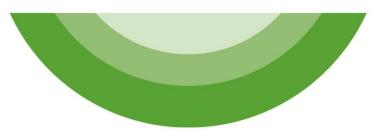
National leaders in the fields of public health and safety discuss the changing landscape of today's marijuana.





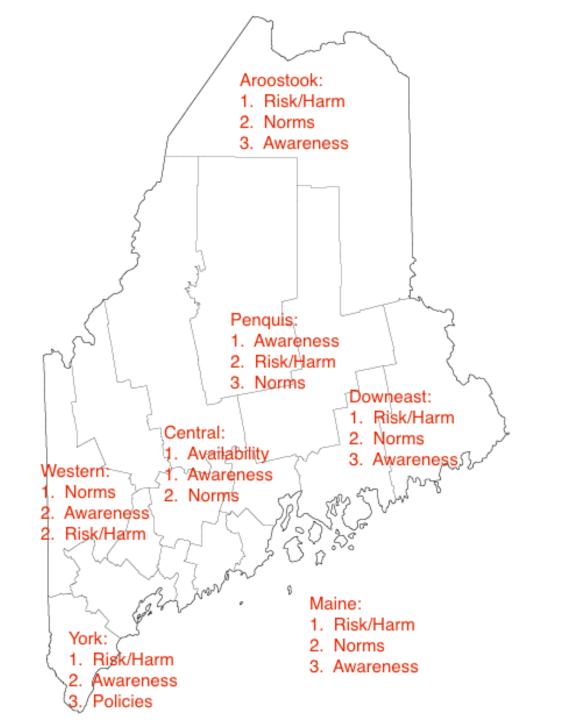






Gauging Intervening Variables across Maine

- Summit participants were asked to think about their community and rate intervening variables for marijuana:
 - Perception of Risk/Harm
 - Access & Availability
 - Pricing & Promotion
 - Policies & Enforcement
 - Lack of Awareness
 - Community Norms
- Participants ranked each intervening variable on a scale of 1 – 5 (1 being "not significant" and 5 being "very significant")



Community Norms

- Parental Apathy
- Parental Modeling
 - Using in front of children
 - Using with adolescents
- Proliferation of marijuana commercialization & normalizing messages
 - Head shops & marijuana-themed or tie-in products
 - Vaping rooms
 - Marijuana-themed festivals & events
 - Social club for those with Medical MJ cards (Bangor)

Policies & Enforcement

- Challenges and barriers for law enforcement
- Landlord and tenants looking for clarity on what is allowed/not allowed
- Lack of leadership from federal government
- School RNs lack of guidance and feel illequipped to navigate new school medical marijuana law.

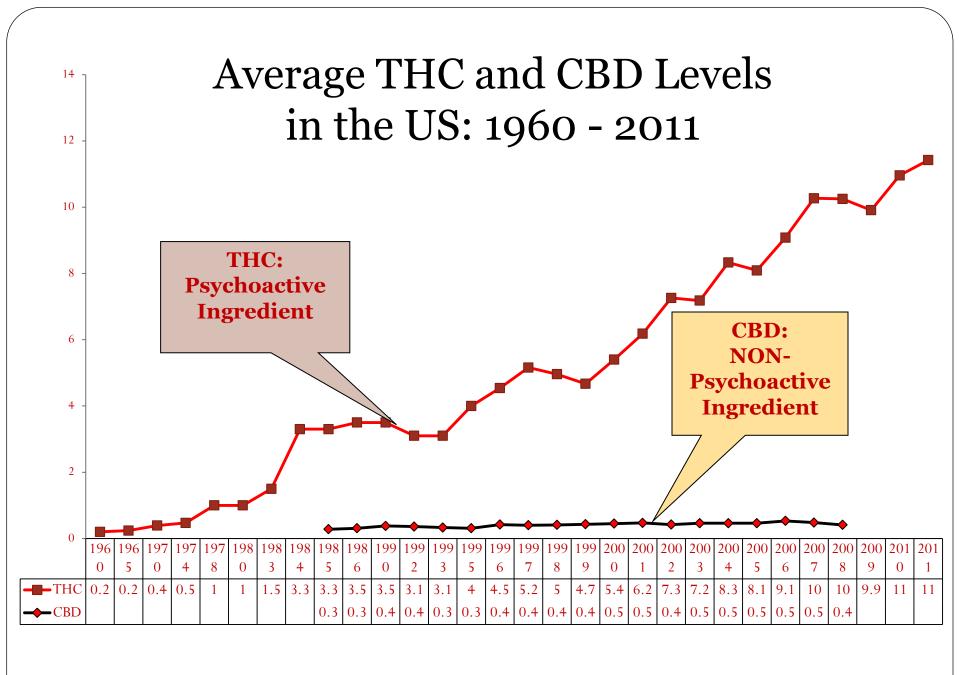
Perception of Risk/Harm

- Marijuana is "safer" than...
- Parental/Adult attitudes: "At least they're using pot and not...[alcohol, tobacco, heroin, etc.]"
- Glamorization in the media and pop-culture

- Hempfest and other marijuana-centered events promoted as family events
- Pregnant women certified for Maine Medical MJ

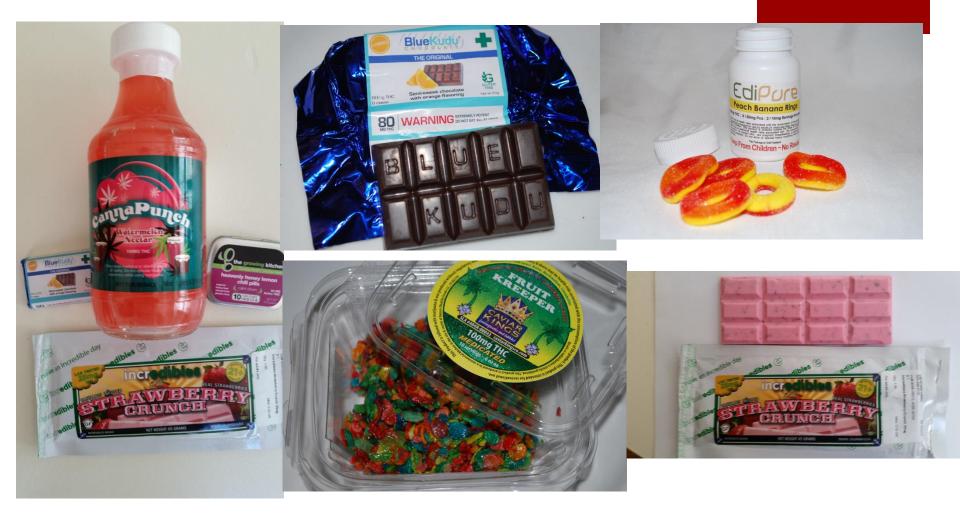
Today's Marijuana

- Today's marijuana is far more potent: The average THC content in marijuana has risen from under 4% in 1983 to more than 10% in 2008.
- Greater marijuana potency means a smaller amount can make someone higher, faster- and perhaps far more intoxicated than they can handle.
- Mehmedic Z, et al (2010) Potency Trends of r9-THC and Other Cannabinoids in Confiscated Cannabis Preparations from 1993 to 2008. *Journal of Forensic Science*, 55(5):1209-17.
- ibid



Source: Mehmedic et al., 2010

This is What Today's Marijuana Looks Like...



Marijuana advertisements and edibles permeate Colorado





Big Tobacco 2.0: Making Drug Use Appealing to Youth









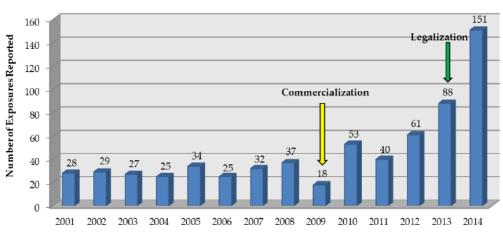


Over 200 Colorado Marijuana Edible Products

- gummies -18
- cereal 7
- cookies -18
- soda 6
- juice -14
- granola bars -12
- chocolate bars -23



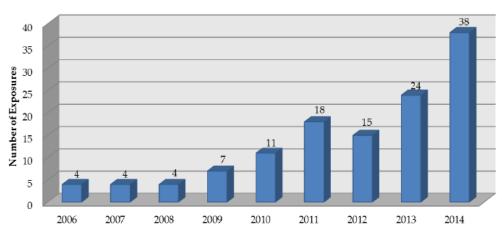
Number of Exposures Reported for Marijuana Only





SOURCE: Colorado Department of Public Health and Environment, Monitoring Health Concerns Related to Marijuana in Colorado: 2014 via Rocky Mountain Poison and Drug Center

Marijuana-Related Exposures Children Ages 0 to 5





SOURCE: Rocky Mountain Poison and Drug Center

Before Legalization: In 2006, Colorado ranked 14th for current marijuana use









After Legalization: Colorado now ranks 1st for current marijuana use amongst youth. (National Survey on Drug Use and Health, 2014)





over alcohol because



it doesn't make me rowdy or reckless.

Why should I be punished?

On November 5th, vote

YES on Question 1

www.MarijuanalsSafer.org

Paid for by the Marijuana Policy Project

The posting of this ad does not constitute or imply an endorsement, recommendation, or favoring by METRO.





Heavily promoted Medical Marijuana Festivals in communities.



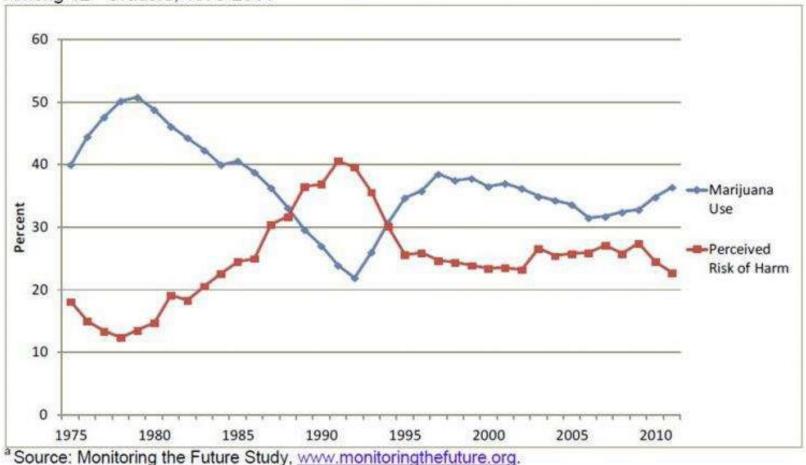
"Drug Duel" — normalizing marijuana and alcohol



Norms from radio – "4:20" Bar Crawl and "Roll Your Own"

PERCEPTION OF HARM DOWN, USE UP

Figure 1. Past Year Marijuana Use and Perceived Risk of Harm of Occasional Marijuana Use Among 12th Graders, 1975-2011



Politics and Policy

The Political & Policy Landscape

- November 2014, three Maine cities targeted for local legalization ordinance referenda:
 - York (Board of Selectmen refused to put on ballot citing it as "unlawful")
 - South Portland (Passed 52% vs 48%)
 - Lewiston (Defeated 45% vs 55%)
- Bills introduced to legalize recreational marijuana were defeated in 2013, 2014, and 2015
 - In 2015, vote in the Maine House was 98-45 against. 27 more votes against compared to identical bill in 2013
- Statewide voter referendum all but certain for November 2016
 - Marijuana Policy Project
 - Legalize Maine
 - In October these two groups have combined to work on one ballot initiative. The initiative will be on the ballot as Question 1

LD 557: An Act To Provide Reasonable Accommodations for School Attendance for Children Certified for the Medical Use of Marijuana

- Requires schools to provide accommodations for students certified for Maine's Medical Marijuana program to have drug administered so they can remain in school.
- After some amendments it was passed 10-1 by Education Committee
- Vetoed by Governor LePage but overridden by 112 v 35 vote in the House and 23 v 11 vote in the Senate.
- "Carry in/Carry Out" policy
 - Drug can be brought in and administered by parent or authorized caregiver and then carried out and not stored on school property.
 - Must be a nonsmokeable form of the drug.

Regulations for certification of minors for Maine Medical Marijuana Program

- Treating physician must provide the minor qualifying patient the risks and benefits of using medical marijuana.
- Treating physician must consult with a qualified physician, aka "the consulting physician"
 - **Consulting physician** selected from a list of physicians who may be willing to act as consulting physicians. The list is compiled by the department after consultation with statewide associations representing licensed medical professionals.
 - Consulting physician either performs an exam of the patient or a review of the medical file.
 - Consulting physician issues a written advisory opinion on whether or not marijuana is appropriate for the identified condition.
 - There is no requirement for the treating physician to abide by the consulting physician opinion one way or the other.

"Responsible" Ohio

- Issue 3 Would have essentially created a Marijuana cartel or monopoly of 10 producers, who also happen to be the investors in the campaign to pass the initiative
- Would have set preferential tax rates into the Ohio Constitution, preventing them from being changed like alcohol, tobacco, etc.
- Ohioans voted on this in November, 2015.
- Issue 3 faced opposition and criticism from other legalizers.
- However, Marijuana Policy Project and NORML endorsed this plan.

Oh, and they created a mascot, say hello to "Buddie"



Issue 3 defeated 65% vs 35%



Marijuana Legalization 2015: Major Pot Activist Quits Marijuana Policy Project, Says Industry Is Taking Over Movement

"...Dan Riffle, federal policy director for the powerful national advocacy group Marijuana Policy Project (MPP) and one of the most outspoken advocates of cannabis legalization, was quitting his job. As Riffle noted in an email to colleagues in early November, the "industry is taking over the legalization movement and I'm not interested in the industry." That same day, MPP announced a new political campaign funded by marijuana industry revenues."

The Marijuana Industry has already taken over the legalization movement

"I think it is a pretty stark example of the kinds of things I was concerned about and that were the reasons why I left," says Riffle of MPP's new funding campaign. "I felt for the last few months the industry was kind of dominating the legalization movement's work in general, and MPP's specifically."

http://www.ibtimes.com/marijuana-legalization-2015-major-pot-activist-quits-marijuana-policy-project-says-2203385

JUST AS WE GET THE TOBACCO SMOKE OUT...



Will smoking pot at a bar soon be legal in Denver?



Marianne Goodland

August 11, 2015 Health 1 Comment



Lighting up a doobie on a bar's enclosed patio? Enjoying a pot brownie at an art opening? It's against the law now, but supporters of a Denver ballot measure to allow for "limited social use" are hoping Denver voters will approve it, come November.

THE LEGALIZATION OF MARIJUANA IN COLORADO: THE IMPACT

Data from Rocky Mountain High Intensity Drug Trafficking Area Full reports available at: http://www.rmhidta.org/

IMPAIRED DRIVING

• In 2014, when retail marijuana businesses began operating, there was a **32 percent** increase in marijuana-related traffic deaths in just one year from 2013.

• Colorado marijuana-related traffic deaths increased **92 percent** from 2010 – 2014. During the same time period all traffic deaths only increased **8 percent**.

YOUTH MARIJUANA USE

- In 2013, 11.16 percent of Colorado youth ages 12 to 17 years old were considered current marijuana users compared to 7.15 percent nationally. Colorado ranked 3rd in the nation and was 56 percent higher than the national average.
- UPDATE 2014 data shows Colorado now ranks 1st for youth use.

• Drug-related suspensions/expulsions increased **40 percent** from school years 2008/2009 to 2013/2014. The vast majority were for marijuana violations.

ADULT MARIJUANA USE

• In 2013, **29 percent** of college age students (ages 18 to 25 years old) were considered current marijuana users compared to **18.91 percent** nationally. Colorado, ranked **2nd** in the nation, was **54 percent** higher than the national average.

• In 2013, **10.13 percent** of adults ages 26 years old and over were considered current marijuana users compared to **5.45 percent** nationally. Colorado,

EMERGENCY ROOM ADMISSIONS

- In 2014, when retail marijuana businesses began operating, there was:
 - **29 percent** increase in the number of marijuana-related emergency room visits in only one year.
 - 38 percent increase in the number of marijuana-related hospitalizations in only one year.

• Children's Hospital Colorado reported 2 marijuana ingestions among children under 12 in 2009 compared to 16 in 2014.

MARIJUANA-RELATED EXPOSURE

- Young children (ages 0 to 5) marijuana-related exposures in Colorado:
 - During the years 2013 2014, the average number of children exposed was **31** per year.
 - This is a **138 percent** increase from the medical marijuana commercialization years (2009 2012) average which was a **225 percent** increase from precommercialization years (2006 2008).

STUDY: EDIBLE POT SICKENS MORE KIDS



A new study shows marijuana poisoning in young children has risen 150 percent in Colorado since the substance was legalized in 2014. (JAMA Pediatrics) http://www.bostonherald.com/news/local_coverage/2016/07/study_edible_pot_sickens_more_kids

MARIJUANA RESOURCES AND CONSIDERATIONS FOR MAINE

IMPAIRED DRIVING

- The issue: Colorado marijuana-related traffic fatalities increase 92% from 2010-2014
- What are other states doing? Colorado has limit of 5 nanograms of *active* THC. Colorado also uses DREs to detect impairment.
- Policy considerations for Maine: Assess capacity of DREs in relation to current Maine marijuana policy. Consider similar active THC blood content limit.
- Colorado Marijuana and Driving campaign:
 https://www.codot.gov/safety/alcohol-and-impaired-driving/druggeddriving/marijuana-and-driving

MARIJUANA AND YOUTH: SCHOOLS

- Issues: Colorado schools: Marijuana is "The No. 1 Problem in Schools Right Now."
 - Marijuana coming into schools
 - Students coming to school under the influence
 - Increase in Marijuana-related suspensions/expulsions
- What are other states doing? Colorado schools reviewing and revising school policies.
- Resource: RMC Health guidance on policies and evidence based curricula addressing marijuana http://my.rmc.org/TFSmarijuana

MARIJUANA AND YOUTH: SCHOOLS

- Policy considerations for Maine:
 - School Districts reviewing and revising policies:
 - Are they current to deal with today's environment (i.e. "medical" marijuana, e-cigs/vaping devices, etc.)
 - SBIRT protocols or diversion to education interventions vs. suspensions (e.g. SIRP)
 - Codify use of evidence-based curricula and programming for universal, primary prevention
 - Rules, guidelines, and expectations for conduct of guests. (e.g. adults at a school sports event)

MARIJUANA AND YOUNG ADULTS: COLLEGES

- Issue: Because most colleges receive federal funding, marijuana is still illegal on campus in legal states, whether or not one is over 21.
 - Many students don't understand this state/federal law conflict
- Second issue: Marijuana tax revenues for education aren't going to colleges. No funding for colleges to do prevention amongst their population.

MARIJUANA AND YOUNG ADULTS: COLLEGES

- Policy considerations for Maine colleges:
 - Training and T/A on state and federal laws
 - SBIRT protocols
 - Clear policies and communication of policies regarding on campus and off campus activities
 - Example Colorado College Policy on Marijuana:
 https://www.coloradocollege.edu/offices/presidentsoffice/
 e/colorado-college-policy-on-marijuana.dot

MARIJUANA AND PREGNANCY

- Issue: Marijuana use during pregnancy including some who receive medical marijuana certifications
- What are other states doing?
 - Colorado: warnings on packaging but bill to require warnings in marijuana shops was defeated by industry.
 - Washington: Marijuana purchasers receive warnings which include the statement: "Should not be used by women who are pregnant or breastfeeding"
 - Resource: Colorado Dept of Public Health: Marijuana Pregnancy and Breastfeeding Guidance for Healthcare Providers.

https://www.colorado.gov/pacific/sites/default/files/MJ R MEP Pregnancy-Breastfeeding-Clinical-Guidelines.pdf

MARIJUANA AND PREGNANCY

- Policy considerations for Maine
 - Require screenings and consultations for women of childbearing age before certifications are issued
 - Require warnings on packaging and in dispensaries/caregiver sites
 - Training requirements for providers issuing certifications
 - training on marijuana and pregnancy
- Resource: <u>SAMHS Pregnancy & Breastfeeding Rack</u> <u>Cards & other resources</u>

RESOURCES

 Maine Office of Substance Abuse and Mental Health Services

www.maineosa.org

- National Institute on Drug Abuse <u>www.drugabuse.gov</u>
- Smart Approaches to Marijuana

learnaboutsam.org

 Rocky Mountain High Intensity Drug Trafficking Area www.rmhidta.org

BLOG & SOCIAL MEDIA

- Bangor Daily News Blog Smart Approaches to Public Health
 - smartapproaches.bangordailynews.com
- SAM Maine Facebook Page
 - www.facebook.com/MaineProjectSAM
- SAM Maine Twitter handle
 - @maine_SAM
 - @ScottMGagnon

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